

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5

IN THE MATTER OF:	)	
	)	
CITGO Petroleum Corporation	)	FINDING OF VIOLATION
Lemont Refinery	)	
Lemont, Illinois	)	EPA-5-01-IL-11
	)	
Proceedings Pursuant to	)	
the Clean Air Act,	)	
42 U.S.C. §§ 7401 <u>et seq.</u>	)	
	)	

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FINDING OF VIOLATION

The United States Environmental Protection Agency (U.S. EPA) finds that CITGO Petroleum Corporation (CITGO) is violating Section 111 of the Clean Air Act, 42 U.S.C. § 7411 at its Lemont, Illinois petroleum refinery. Specifically, CITGO is violating the Standards of Performance for Petroleum Refineries at 40 C.F.R. Part 60, Subpart J.

Statutory and Regulatory Background: NSPS Subpart J

1. In accordance with Section 111(b) of the Act, On March 8, 1974, U.S. EPA promulgated New Source Performance Standards (NSPS) for Petroleum Refineries, 40 C.F.R. Part 60, Subpart J, Sections 60.100 - 60.109 (Subpart J). The U.S. EPA promulgated revisions to these regulations on October 2, 1990, at 55 Fed. Reg. 40171-40178 and 40 C.F.R. Sections 60.100-60.109.
2. The provisions of Subpart J apply to fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and all Claus sulfur recovery plants except Claus plants of 20 long tons per day (LTD) or less. 40 C.F.R. § 60.100(a).
3. A Claus sulfur recovery plant is a process unit which recovers sulfur from hydrogen sulfide by a vapor-phase catalytic reaction of sulfur dioxide and hydrogen sulfide. 40 C.F.R. § 60.101(i).
4. Any Claus sulfur recovery plant which commences construction

or modification after October 4, 1976, is subject to the requirements of Subpart J (40 C.F.R. § 60.100(b)).

5. Modification means any physical change in or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility.
6. For Claus sulfur recovery plants subject to the NSPS, 40 C.F.R. § 60.104(a)(2) prohibits the discharge of any gases into the atmosphere in excess of:
  - i. For an oxidation or a reduction control system followed by incineration, 250 parts per million (ppm) by volume (dry basis) of sulfur dioxide (SO<sub>2</sub>) at zero percent excess air.
  - ii. For a reduction control system not followed by incineration, 300 ppm by volume of reduced sulfur compounds and 10 ppm by volume of hydrogen sulfide (H<sub>2</sub>S), each calculated as ppm SO<sub>2</sub> by volume (dry basis) at zero percent excess air.
7. For a Claus sulfur recovery plant with reduction control systems followed by incineration, an owner or operator must install, calibrate, maintain, and operate an instrument for continuously monitoring and recording the concentration (dry basis, zero percent excess air) of SO<sub>2</sub> emissions into the atmosphere.
8. For all affected facilities subject to NSPS, 40 C.F.R. §60.13(g) requires when the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install an applicable continuous monitoring system on each separate effluent unless the installation of fewer systems is approved by the Administrator. When more than one continuous monitoring system is used to measure the emissions from one affected facility (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required from each continuous monitoring system.
9. Section 111(e) of the Act prohibits any owner or operator of

a subject stationary source from operating such source in violation of any applicable standard of performance promulgated pursuant to Section 111 of the Act.

#### STATEMENT OF FACTS

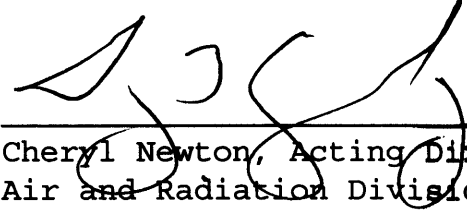
10. CITGO operates a petroleum refinery at 135<sup>th</sup> Street and New Avenue, Lemont, Illinois, 60439.
11. CITGO operates a single sulfur recovery plant comprised of four Claus sulfur recovery trains at the Lemont Refinery. The four Claus trains are fed acid gas from a common header and compose a Claus sulfur recovery plant as defined at 40 C.F.R. § 60.101(i). The CITGO sulfur recovery plant is an NSPS affected facility.
12. CITGO claims that it has two separate Claus sulfur recovery units. The first Claus Sulfur recovery unit (Unit 119) is comprised of Claus trains A and B, each is followed by a tail-gas oxidizer only. The second Claus sulfur recovery unit (Unit 121) is comprised of Claus trains C and D, each has a Beavon tail-gas treatment unit and a common Stretford unit.
13. According to information from CITGO, the Unit 119 Claus sulfur recovery trains were constructed in 1968 and currently have a capacity of approximately 50 LTD each. The Unit 121 Claus sulfur recovery trains were constructed in the 1974-1976 time period, were started in 1977, and currently have a capacity of approximately 150 LTD each.
14. Uno-Ven (the Lemont Refinery's previous owner) supplied pertinent data on the SO<sub>2</sub> emission factors for Units 119 and Unit 121 to the Illinois Environmental Protection Agency in a June 2, 1995 Permit to Operate Renewal Application. Using those factors, Unit 119 has an emission rate of 1306.7 pounds of sulfur dioxide per hour and Units 119 and 121 combined have an emission rate of 1362.7 pounds of sulfur dioxide per hour.
15. CITGO modified the original Claus sulfur recovery plant (Unit 119) (an existing facility) in 1977 when it tied in

the Unit 121 Claus trains to the common acid gas feed header and caused a 54 pounds of sulfur dioxide per hour emission rate increase.

#### Violations

16. After completing the Unit 121 construction and tying the Unit 119 and Unit 121 sulfur trains together with a common feed header in 1977, CITGO failed to conduct performance testing at the Claus Sulfur recovery plant within 60 days after the Claus sulfur recovery plant achieved maximum production rate, violating 40 C.F.R. § 60.8(a) and §60.106(f).
17. CITGO failed to install, calibrate, and operate a continuous monitoring system at all of the Claus sulfur recovery plant emission points, violating 40 C.F.R. §§ 60.13 and 60.105(a)(5).
18. CITGO failed to submit any excess emissions reports and monitoring systems performance reports for the Claus sulfur recovery plant, violating 40 C.F.R. § 60.7(c).
19. CITGO failed to demonstrate emission limitation compliance at all of the Claus sulfur recovery plant emission points, violating 40 C.F.R. § 60.104(a)(2)(i).

7/12/01  
Date

  
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Cheryl Newton, Acting Director  
Air and Radiation Division

CERTIFICATE OF MAILING

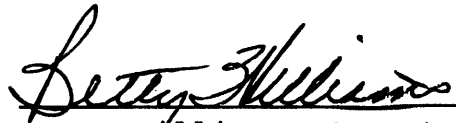
I, Betty Williams, certify that I sent a Finding of  
Violation, No. EPA-5-01-IL-11, by Certified Mail, Return Receipt  
Requested, to:

Claude Harmon, Environmental Manager  
CITGO Petroleum Corporation  
Lemont Refinery  
135<sup>th</sup> Street and New Avenue  
Lemont, Illinois 60439

I also certify that I sent copies of the Finding of  
Violation by first class mail to:

Julie Armitage, Acting Manager  
Compliance and Enforcement Section  
Bureau of Air  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
Springfield, Illinois 62702

on the 13<sup>th</sup> day of July, 2001.

  
Betty Williams, Secretary  
AECAS, (IL/IN)

CERTIFIED MAIL RECEIPT NUMBER: 70993400 000095961903